SNC Reference Number
(enter if previously assigned)

PROJECT SUMMARY

County: Mono

Applicant: California Trout

Project Title: Hydrological modelling of the Upper Owens River watershed

PROJECT GOAL

The goal of this project is to ensure the biological integrity of the Upper Owens River watershed while meeting the freshwater needs of local and distant human populations.

PROJECT SCOPE

The objective and primary deliverable of this proposal is to develop a hydrologic model for the Upper Owens River watershed, which will:

(1) identify and characterize its hydrologic attributes, (2) determine the relative quantities of its various fresh water sources, for example, groundwater and springs and surface flows, (3) document the relationship between ground water, spring sources and surface flows, and (4) provide recommendations specific to the appropriate allocation of freshwater resources derived from the Upper Owens River watershed. With comprehensive data and an effective hydrologic model, we will be able to conduct simulations to understand the potential hydrologic changes attributed to different anthropogenic use patterns and climate change variability.

We will also review existing literature to determine whether there is an interbasin connection between the east and west slopes of Mammoth Mountain. Additionally, water chemistry samples from the east and west sides of San Joaquin Ridge will be analyzed for major ions and naturally occurring isotopes. If similarities are found, the information gathered will be used as the basis for a second project with the objective of studying the water connectivity between the east and west side of San Joaquin Ridge for future management purposes.

This project will involve a series of phases including: (a) Surveying existing hydrologic data relative to the Upper Owens River watershed (b) identifying data gaps and implementation of necessary primary data collection (c) developmentof a hydrologic budget (d) validation of a hydrologic model specific to the Upper Owens River watershed (e) conducting simulations based on different water demand and climate change scenarios and, (f) development of final report inclusive of water-use recommendations for the Upper Owens River watershed.

California Trout will be responsible for the overall coordination of this project.

Snow Hydrology and the Hydrologic Sciences Program at the University of Nevada, Reno will be primarily responsible for phases a and b, noted above. Phases c and d will be performed under contract by experienced professional surface and groundwater modelers. Throughout all phases of this project and as part of funding from this grant, consultation services will also be provided by the US Geological Survey and the Bay Institute. In-kind contributions in the form of consultative services from the National Park Service, Mammoth Community Water District, Los Angeles Department of Water and Power will also be provided with an expected in-kind match equivalent to more than $25,000. As fiscal sponsor of this project, California Trout will be responsible for securing a cash-match contribution of just over $53,000.

LETTERS OF SUPPORT

Letters of Support will be provided by: (1) Mammoth Community Water District (2) NPS (3) US Forest Service (4) Los Angeles Department of Water and Power and (5) US Geological Survey (6) University of Nevada, Reno. An additional Letter of Support is being pursued on behalf of the Mammoth Mountain Ski Area.

SNC PROJECT DELIVERABLES AND SCHEDULE

DETAILED PROJECT DELIVERABLES	TIMELINE
Comprehensive literature review of the current body of knowledge pertaining to the hydrology, biophysical attributes and ecology of the Upper Owens River watershed including recommendations of addititional data needs for development of hydrologic model.	May 15th, 2009
Development, implementation and completion of methodological work plan necessary to acquire additional hydrologic data for proposed model.	June 1st, 2009-May 31st, 2010
Development and validation of hydrologic model.	June 1st, 2008-January 31st,2011
Final report based on completed modelling simulation and final recommendations for water-use in the Upper Owens River watershed.	August 31st, 2011
Scientific article submitted to peer reviewed journal.	December 31st, 2011

SNC PROJECT COSTS

PROJECT BUDGET CATEGORIES	TOTAL SNC FUNDING
Project Coordinator (Caltrout)	$27,000
Contracts (Consultants, modelling firm)	$244,000
Travel (meetings, data collection etc.)	$10,000
Materials (equipment/lab fees, publication materials)	$10,000
Project administration	$15,000
	$
	$
	$
	$
	$
SNC GRANT TOTAL	**$306,000**